Pests

AND THEIR CONTRO

1943

AUGUST

VOL. 11 NO. 3

ORGAN OF THE PEST CONTROL INDUSTRY

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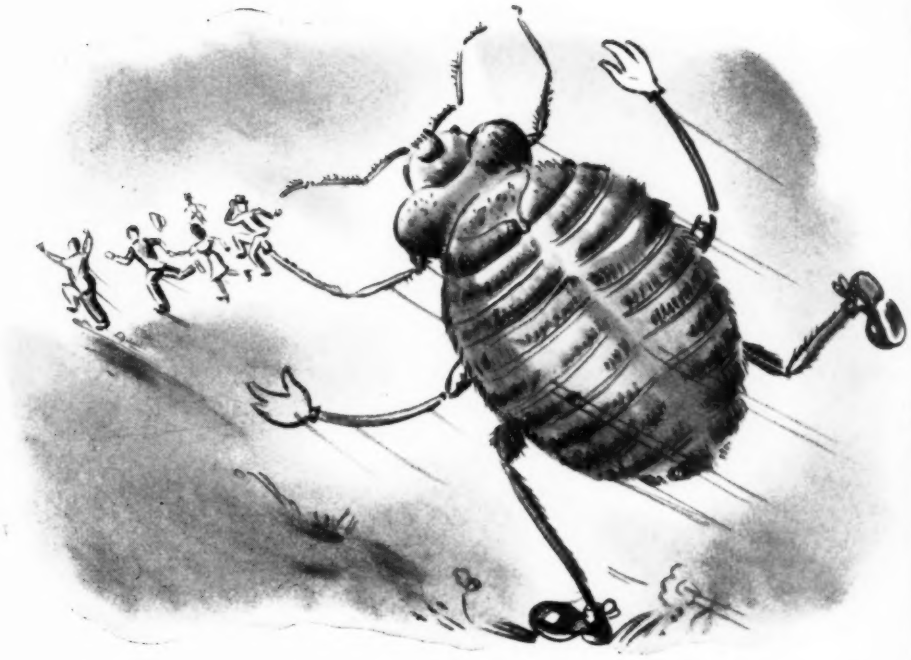
Fumigators
Termite Control Operators
Entomologists
Insecticide and Supply Mfgrs.



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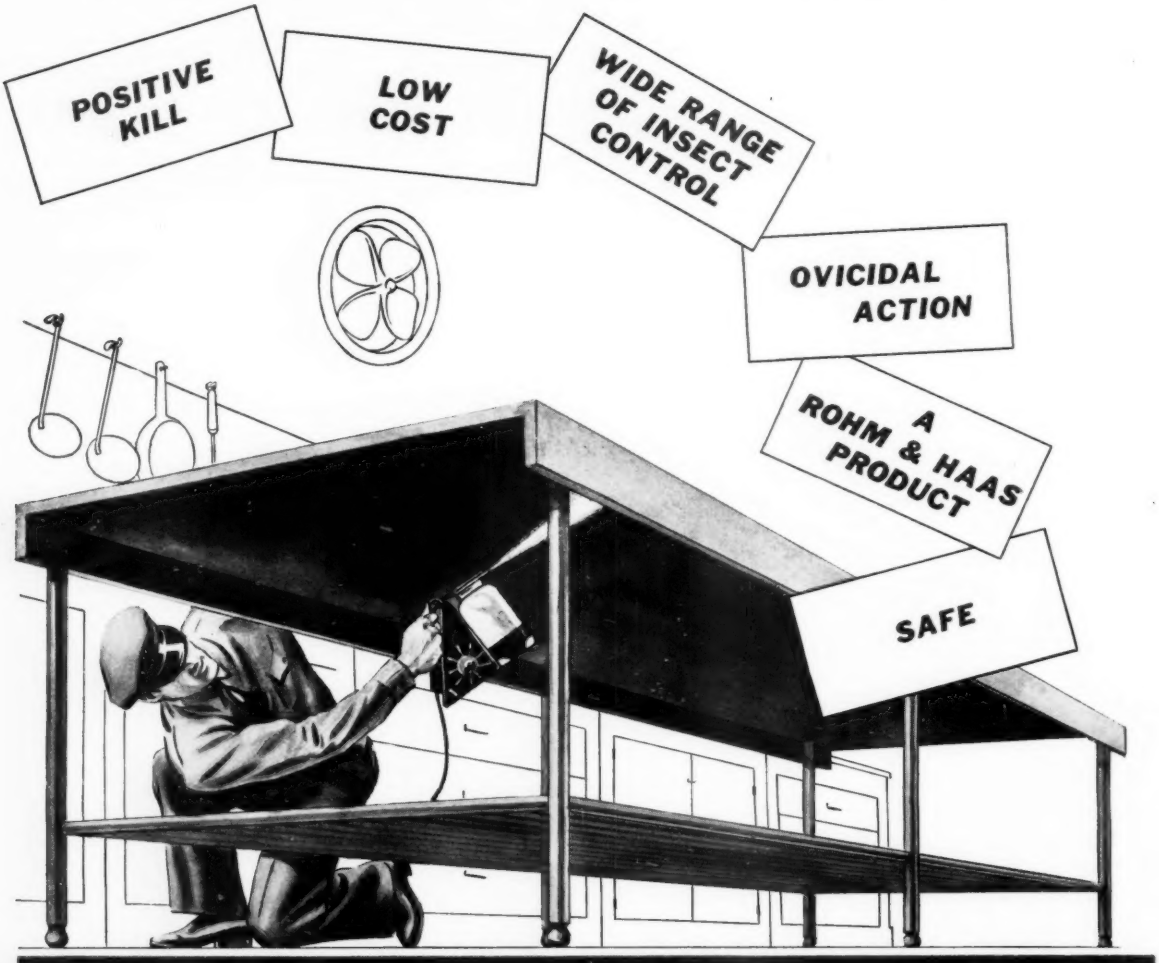

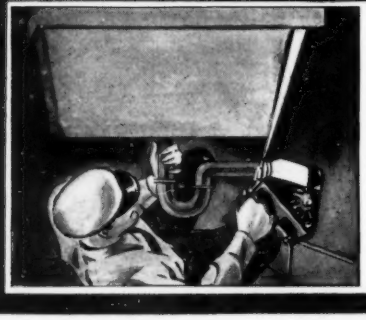

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For further details, communicate with
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3019 Fort Hamilton Parkway **Brooklyn, New York**

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EDITORIAL

Harry Cassilly

On July 1st, in attempting to rescue one of his employees overcome with Cyanide on a fumigation job, Harry lost his own life. Harry operated the City Fumigating Co., of St. Louis, Mo. for many years. He has been one of the outstanding members in the St. Louis PCOs Association and has contributed materially to the success of the local association. Harry has won the respect and friendship of his fellow operators as well as those that knew him.

We mourn the loss of a friend and member of our Association.

We extend our condolences and sympathy to his family.

Dr. L. S. McLaine

Dr. L. S. McLaine, who helped pioneer the First Canadian PCO Conference during March by appearing on its program at the University of Montreal, died July 20 at his summer home at Lake Bernard, Que. Dr. McLaine, 56, was Dominion entomologist and assistant director of the Agriculture Department's science service.

Born in England, Dr. McLaine attended Boston University and Massachusetts State College, where he received his master of science degree in 1912. For a time he was employed by the Massachusetts government.

In his passing the Canadian Government has lost an able entomologist and the Industry a good friend and counsellor. Our sincerest condolences to the family of Dr. McLaine.

Manpower

AS THE full effects of the new War Manpower job-freeze stabilization program begin to percolate through to the man in the office, on the farm, in the factory, and in the service professions, this much is certain: There is no ready-made or pat answer to all questions that may conceivably arise thereunder, and that employer and employee alike have an equal obligation to stabilize and to minimize personnel shifts, save, in those instances, where to do otherwise would advance the war effort.

Effectuating this program is the U. S. Employment Service, the functions and the authority of which may be loosely likened to those of the Draft Board, and with applicants' stories questioned and investigated. Particularizing somewhat further, an employee cannot swap jobs on the ground that he is dissatisfied with the one he holds, unless the employer gives him a written clearance and then explains to the USES why he did; nor can an employee without permission take a job nearer home because of its convenience, leave the city and get a job in another town, or even keep the job he has if the USES decides he's needed in more important work.

In connection with any employment shifts the employer is required not only to furnish a written clearance in each such instance but also to make sure that he is not hiring an individual who comes within the scope of the stablization program. Although it has been ruled by the Manpower Commission, Structural Pest Control comes within the broad scope of the stabilization program, the NPCA, nevertheless, points out in Service Letter No. 298 that this ruling does not necessarily signify that every employee comes specifically within purview of the ruling.

In answering a letter from the NPCA, which had raised several questions regarding procedures applicable to an activity (Structural Pest Control) designated as essential, the Office for Emergency Management of the War Manpower (under date of June 24th) stated*:

> The activities included in the **List and Index of Essential Activities** (our Industry is included—see Service Letter No. 296) are subject to the provisions of the War Manpower Commission's employment stabilization program. Since these programs differ somewhat from area to area, it is impossible to furnish you with answers to your questions that would be applicable for the entire industry. I suggest, therefore, that each of your various firms determine its exact status by contacting the appropriate War Manpower Commission's area, state or regional director."

* *Letter reprinted from Service Letter No. 298, through courtesy of the NPCA.*

Permanent-Type Rat-Control Project Favored by Public Officials

WITH noteworthy exceptions, of course, it has been manifest, we think, that inertia, lack of funds, lack of an appropriate public educational program, and especially failure to provide the framework for a pragmatic rat-control project, within which all interested elements participate, all these have nurtured and fostered an overgrowth which has obscured the underlying necessity for, and hampered the progressive development of, a coordinated and aggressive series of permanent or continuing rat-control projects on a nation-wide basis.

Equally obvious, however, is the fact that the exigencies of war have brought into sharp focus the interrelation between effective and continual rat control on the one hand, and the preservation of health standards and foodstuffs on the other. In so doing they have cut through this overgrowth and laid the groundwork for the eventual emergence of a successful program of rat projects.

No one will deny that rat-control projects help prevent plague and limit food spoilage—as indeed they will if conducted on a regular continuing basis, with all responsible agencies collaborating—and the extent to which they do, they must, in effect, make a positive contribution to the solution of war problems arising out of the shortage of doctors, absenteeism, rationing and factors of morale.

That governmental and civic agencies and the Industry are planning and thinking along the lines of a continuous

rat extermination drive, rather than sporadic rat campaigns, is attested by some recent expressions of opinion, the gists of which are here indexed.

First of interest is a statement by Chairman W. Scott Kendrick, of the Buffalo Victory Garden Committee, quoted in the "Buffalo Evening News," June 23 issue. Mr. Kendrick stated: "It is recognized that the extermination (of rats) has been considered largely a problem for the individual householder, but it is essentially a matter requiring effective organization of community efforts . . . They (the rats) will never be exterminated but their numbers may be kept reduced to a minimum if there is continual and universal war carried on against them. It is merely a matter of organization and general employment of proper repressive measures." Chairman Kendrick also pointed that "there has been a substantial movement in effect for several years to get a sanitary engineer appointed to the Health Department to take charge of matters of general health interest as well as **long-neglected** pest control." He added, "I think we should have a sanitary engineer," and that "in order to make a rat-control program a continuing one, there should be a trained sanitation expert to direct the program."

According to "The Commercial Appeal," Memphis, W. A. Ryan, of the Council of Civic Clubs, that city, speaking at the termination of a 3-week rat project, said: "The educational work alone will not rid Memphis of rats. We still have rats, and have got to keep up the work." After stressing the fact that throughout the campaigns Memphians have been urged to destroy harborage and feeding places of rodents, Mr. Ryan praised the Memphis Shelby County Health Department for its suggestions in preparing antirat instructions and for advising citizens of methods to alleviate their personal problems.

Of primary significance, because they foreshadow a definite niche for the PCO in organized rat control, are the remarks of Dorr D. Green, Chief of Predator and Rodent Control, U. S. Department of the Interior, Fish and Wildlife Service, Chicago, Ill. When queried by this publication as to how the pest control operator could assist city and government officials in rat-control operators, Mr. Green replied:

Most of our rat control work conducted in cooperation with the officials of various municipalities up to the present has partaken more or less of the campaign nature in which the towns and various civic organizations finance the job. Now, however, we are encouraging more and more a permanent type of project, in which the various interests cooperate, including pest control operators and others who have something to contribute to the program. These projects are relatively new, and consequently have not progressed to the stage where much concrete information is forthcoming concerning the effectiveness of this type of cooperation. So far as we are aware, in most instances PCO people sit in with the municipal officers and assist in the formulation of the control program. An experimental project was recently inaugurated by our District Agent, G. C. Oderkirk, in a section of Chicago, in which he solicited the cooperation of all interests who could contribute something to the furtherance of the project. In this endeavor, Walter McCloud is representing the pest control operators. We are watching it with a great deal of interest, and it should demonstrate the feasibility of organized rat control wherein pest control operators constitute one of the participating agencies.

**See NPCA Service Letter No. 290.*

Free Inspections

MANY articles have been written in the past few years and published in the different news Bulletins as well as Pest Magazines on the subject of Free Inspections and standardizing inspection reports. There will be more articles written and published on the same subject from time to time and yet there is a certain per cent of the industry who will ignore it because they started their business that way and there is an inward fear that they could not exist without it. Is it lack of backbone or what is it? I have had many operators tell me how they kick themselves for the amount of work they did without pay after swinging over to the paid inspections.

To those giving free inspections, I want to ask a few questions.

Who pays for the inspection that is not turned into a job for you? Is it not a fact that sales made on solicitation is much harder to handle than those made from "paid inspections" and written reports.

Is it good business or is it poor business to rush out and give estimates free, when you know well that there are several ahead of you and perhaps more to come.

Is it any satisfaction to bid so low to get the job that you have to "skin it"?

When a job is bid too low, do you skin the job or yourself? A poor job will invariably boomerang. Is it not so?

Why should you work personally for some one for nothing. Isn't your time worth something or can you get men today willing to work for nothing?

It seems to me that there is a golden opportunity for every sincere firm to unite and cooperate in this effort to charge for inspections and give written reports. The price you quote for a job is your own business. There is no law to compel you to charge for your work but isn't there satisfaction in doing a good job and being well paid for it? A job well done always makes a friend out of your customer. Isn't it fine to have and know a lot of friends?

—D. S. Rennie.

Maintain the Quality of Your Work

THESE are trying times for the PCO, as they are for people in other lines of business. But the problems of the PCO, especially as regards fumigation, are of particular importance because of the nature of the business. The Pest Control Operator cannot afford to take chances and the temptations to do so today are many. With the labor shortage, there is the tendency to use "green" men or men not thoroughly experienced, or too few men may be used on a large fumigation job, or the period of fumigation may be cut with the resultant possibility of getting a poor kill, or the time of ventilation may be shortened thus endangering the health and lives of people allowed to return to the premises too soon.

To the PCO's facing a shortage of labor we strongly urge for their own interest that they make every effort

(Continued on Page 18)

Mr. Chigger Moves In On The Army

The letter from Lt. Cyril J. Hatch, former member of the Industry and employee of Walter S. McCloud, of Chicago, through whose courtesy it is made available, is published not only because of its humorous content but also because it symbolizes, quite admirably we think, the high morale of our troops in the field, who, instead of being frustrated by environment, give the impression of having the situation well in hand (no pun intended). Incidentally, there is available an informative leaflet on chiggers and their control, issued June '41 by the U.S.D.A., Bureau of Entomology and Plant Quarantine, Washington, D. C., titled CHIGGERS, circular 14 of the Insects in Relation to National Defense series. —Ed.

Dear Walter:

At present all my letters are executed in lead pencil, which, I am told, is not good Emily Post. Well, when you consider that my damn fountain pen—which has never worked anyway—has gone AWOL, that I am writing by campfire light, the only light available, and that I am scratching chigger bites as I write, I am sure you will overlook my break with Emily.

But say, I don't believe you're acquainted with the chigger. Speaking on the basis of first-hand information, my dear Walter, permit me to tell you about this charming little fellow, the chigger, a mite of a creature scarcely larger than a pin point, and with all the potential authority of the latter for making itself felt.

He generally abounds in those regions of America wherein people of your ilk are referred to as "damn yankees." As far as I can determine, though I may not be too correct in my entomology, the life cycle of the chigger is divided into two stages: herbivorous and carnivorous. During the former stage the chigger clings to weeds and grass, his diet strictly vegetarian. Apparently, salads soon pall and he becomes raw-meat conscious. And brother, that's where you come in! The voracious chigger "leaps" upon the person of the first unwary passerby, and that's not the half of it. He has the "delightful" habit of attaching himself to the skin of the victim, sticking closer than a collection agency does to a recalcitrant debtor. From thence on there's no living with him, it's just a case of scratch, and how! For a living.

The chigger has but one interest in his prospective blood-donor victim —Gastronomic. His victim stalked; mess call is sounded. Soon all the big chiggers and all the little chiggers, from miles around, together with all of their progeny, relatives and friends, and also all the progeny, relatives and friends of the friends—thousands of them, literally—converge towards the front, attacking in force, blitz-fashion, affect landings on hostile shores, and remain in complete possession until counter-attacked by scratch and chemical warfare. In fact I once knew a soldier in Louisiana, who, after sleeping in the woods for several weeks, appeared for an examination. His body was so covered wtih chigger bites that after the soldier had removed all his clothing, the medical officer asked him why he was wearing red flannels in the summer.

To judge from the number of chigger offspring the female of the species must be fecund beyond words; in comparison Mrs. Dionne has been practically sterile. In a word each happily maried, common law or just plain chigger couple begets millions of little chiggers on an endless conveyor-belt mass-production basis.

I know of no cure for the itching of chigger bites except to scratch 'em, which, like the squirrel in the revolving cage, gets one nowhere rapidly except to aggravate matters. Chiggers disappear with the first frost; but throughout the summer they remain one of three great curses of a soldier's life, the other two being; first sergeants and M.P.'s.

Chiggers are sometimes affectionately referred to as "red bugs." However, I've heard soldiers call them by other—and—quainter names.

But I digress. This didn't start out as an entomolgical treatise. Rather, I wanted to say that both Jerry and I fully enjoyed the evening we spent with you and Mrs. McCloud. I didn't have a chance before leaving to properly thank either of you. At any rate, I want to do so now; and though somewhat belated, you may be sure it's none the less sincere.

Let me hear from you if you have time to write. Please give my very best to Mrs. McCloud.

Cheerio,

Readers, Attention!

The Post Office Department has asked that the postal delivery zone appear on mail addressed to this office. Please bear this is mind in writing us and use our zone number 6 following Kansas City 6, Mo. thus—Kansas City 6, Mo. This will facilitate more prompt delivery after the mail reaches Kansas City 6, Mo., and will be mututally advantageous.

Sodium Fluosilicate to Control Poultry Lice

By **HENRY E. PARISH,** *U. S. Department of Agriculture, Agricultural Research Administration Bureau of Entomology and Plant Quarantine*

In an attempt to find a suitable substitute for sodium fluoride, which is now an essential defense material, 1,830 chickens were treated for the control of poultry lice during the period January 28 to November 21, 1942.

With sodium fluoride as a check, eight laboratory and eight field tests were conducted using sodium fluosilicate of 35- and 98 per cent[1] purity. Very encouraging results were recorded when these materials were used as dusts and dips in laboratory tests. The dusting of chickens for the control of poultry lice was performed by the "pinch method," and in dipping tests two concentrations were used—½ ounce and 1 ounce of chemical per gallon of tepid water. In some of the tests a near-neutral soap was added at the rate of 1 ounce per gallon of water. This resulted in a more thorough and speedy wetting of the test animals but had no apparent effect on the efficacy of the test material.

One field test was conducted in which the "pinch method" of dusting was used, the results of which were not so satisfactory as those recorded in laboratory studies. This test involved 166 birds, and 28 days after treatment 91 live lice were found when the entire flock was examined. At the time of treatment this flock was in the process of molting and many of the feathers present had very few barbules on them.

In all field tests, observations to determine kill of lice and effect of treatment on the chickens were made at 7-day intervals over a period of 21 to 35 days. Observations on laboratory-treated animals were made more often over a period of 21 to 27 days. The chickens treated ranged in age from 2 months to adult. No harmful effects were noted from either of the test materials.

Seven grown and two 1-month-old peafowls were also dipped in a solution containing 1 ounce of 35 per cent pure sodium fluosilicate which resulted in complete destruction of a heavy infestation of **Goniodes pavonis** (L.) with no apparent ill effect on the hosts.

Dips containing 1 ounce of sodium fluoride, sodium fluosilicate 35 per cent pure, or sodium fluosilicate 98 per cent pure per gallon of dip gave 100 per cent control of lice on 385, 361, and 793 birds respectively. The same results were obtained when 88 chickens were dipped in 0.5 ounce of sodium fluosilicate (98 per cent pure) per gallon. —2-19-43.

[1]Samples obtained from Henry Sundheimer, Inc.

—*Journal of Economic Entomology.*

Pyrethrum and Rotenone Situation

By HAROLD NOBLE, *S. B. Penick & Co.*

Text of Mr. Noble's talk at NAIDM's War Problems Conference, Cleveland, Ohio, June 8, 1943.

THE growers in KENYA have been encouraged to plant and cultivate more PYRETHRUM each year and statistics show steady progress both in acreage and tonnage up to last year. Then the effect of the war was sharply felt in East Africa. Labor was drained from the fields and the Colonial Government encouraged the growth of larger food crops. The weather is always an important factor and it is unfortunate that Kenya suffered a drought this Spring,—the results being lower production. As you probably know the various agencies at Washington have been collaborating with the British Raw Material Supply Commission looking toward greatly increased production and the farmers will be paid an increase in price to them amounting to about 20%. The acreage in 1941, 1942 was around 39,000. In view of the necessity for foodstuffs in KENYA there is a serious question as to whether it is possible to increase the acreage devoted to PYRETHRUM cultivation above the present level. While PYRETHRUM is an excellent exportable commodity for the Kenya Colony, it is of secondary importance when the matter of food supply is considered.

The normal peacetime United States consumption is 13,000,000 pounds. In 1942 imports here dropped to 8,000,000 pounds but as the saying is "stocks in the pipelines were fair." Unfortunately it was the civilian usage which felt the full impact of the diversion of pyrethrum to the military.

The imports in the first five months of 1943 fell off to a little over 3,000,000 pounds and reports of production in Africa indicate that in the remaining seven months of 1943 but 2,300,000 pounds will actually arrive here from Kenya, Tanganyika and the Belgian Congo. A study of production figures by months emphasizes the effects of the drought this Spring in Kenya and the estimated production for the coming four months reflects the food needs situation and the loss of manpower.

Those conversant with the situation frankly are very much concerned and there are no other areas of production except India and Brazil. India will need for its own consumption all the limited quantity it can raise for the next five years, maybe more, and flowers from southern Brazil would total only from half to a million

Here Is a Testimony of Value to you

FEDERAL CHEMICAL COMPANY, Inc.
INDIANAPOLIS, INDIANA

A. D. Bosley Company,
3048 N. Pennsylvania Street,
Indianapolis, Indiana.

July 19th, 1943.

Gentlemen:

In reply to your letter regarding the results we have obtained in using PYRE-THANE we are happy to give you the following information:

1. PYRE-THANE when used full strength in packing houses and other places where Sodium Fluoride is prohibited we have found that we get the same kill as with Pyrethrum and a far better kill several days after each treatment, as the residual effect of PYRE-THANE remains many times longer than Pyrethrum.
2. ARAB ROACH POWDER which contains 20% PYRETHANE, 50% Sodium Fluoride, 30% Talc has been used by our Service Department during the past six months. Our operators prefer this to Pyrethrum Roach Powder as the dust problem has been eliminated almost 100%. We are only using 50% to 60% as much of this Roach Powder as we formerly did when we used Pyrethrum. From experience we did not know why we were able to save so much powder but since reading John M. Hutzel's article in the June issue of Pests we know that the oil content of PYRE-THANE in our powder is one of the ingredients that has made the difference. Please note Paragraph No. 4 Page 10 June Pests.

We want to thank you again for bringing PYRE-THANE to our attention last January as this is a case of where the substitute is better than the original.

Very truly yours,

FEDERAL CHEMICAL CO., INC.
H. B. JORDAN, President.

HBJ:el

CONSERVE CRITICAL WAR MATERIAL

USE

PYRE-THANE

For Your

ROACH POWDER

Fast Knockdown — Positive Kill

Residual Action — Economical

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Pyre-thane	Roach Powder Containing Pyre-thane and Sodium Fluoride
200 lb. Bbl.....35c per lb.	
100 lb. Drums..38c per lb.	100 lb. Drums..25c per lb.
50 lb. Drums..40c per lb.	50 lb. Drums..30c per lb.

A. D. BOSLEY COMPANY
INDIANAPOLIS 5, INDIANA

pounds—and the pyrethrins content are but half that of the African grade. It is clear therefore that the 1943 production of about 6,000,000 pounds is a 25 per cent decrease from 1942 and is only one-half our normal needs —exclusive of military requirements.

Production in this country is considered by authorities as impracticable. Labor costs are high and the experience required by a PYRETHRUM EXTRACT manufacturer in Minneapolis who has done considerable missionary work in this regard in Colorado seems to confirm this observation.

A plan for hemisphere production is under way provided an adequate supply of good quality PYRETHRUM seeds is available. It is obvious that any relief from these efforts can only result after several years work. PYRETHRUM is not harvested until the second year after planting and you may be aware of the sweat and toil necessary to get the rubber, cinchona and fiber programs under way in the several countries of Latin America. The problem presents a challenge to the resourcefullness and experience of industry and we hope in cooperation with the several Governmental Agencies interested that progress can be made under these plans. This, however, would be a long term project and obviously affords no early relief of the present tight situation.

Demand—You undoubtedly have heard and read of the fairly well publicized **Aerosol Program** which is employed by the army, navy, air transport service and the United States Public Health Service for the control of anopheles mosquitoes which are the carriers of malaria germs. This is now standard equipment and substantial quantities have already been used in tropical combat areas overseas. Packed under pressure, each one pound can, which is about the size of an ordinary can of soup, releases a fine mist fatal to the insect it hits. In twelve to fourteen minutes a dispenser will spray 150,000 cubic feet of space equal to 240 army pup tents or fifty fortress bombers, or to put it another way would spray a room 10 feet high and 125 feet square.

The liquified gas used is called freon. The chemical name is dichloro, difluoro-methane. The invention of this dispenser is by Goodhue and Sullivan of the Department of Agriculture and for this the Dept. deserves much credit. Description is found in Industrial and Chemical Engineering of December 1942. It would be our observation that these **Aerosol** dispensers will be used by our industry after the war. Undoubtedly, refillable dispensers will be generally manufactured and pressure tanks similar to oxygen tanks will be spotted throughout the country.

Military Needs—The military requirements necessarily vary. If combat zones develop in the tropics more PYRETHRUM is used than if hostilities arise in the Northern or Arctic regions. It is unnecessary to discuss in detail the figures assembled by the military. It is sufficient to state they are beyond the tonnage of FLOWERS in hand and in sight. In addition to the **Aerosol Program** which has to do with mosquito control, the army called for a louse powder and the body louse is a potential carrier of typhus fever. However pyrethrum is now omitted from this powder. The army is obliged to consider the danger to our troops who may have to move into areas where, in the past, epidemic conditions have prevailed among the civilian population. We refer particularly to the Southeastern Europe.

In the Spring army gave way to agriculture to some extent because of the need of PYRETHRUM for essential crops. However, with 1943 farm insecticide program fairly well along, army again becomes a substantial claimant during the remaining part of the year.

As the picture appears to develop, the Army needs are continuing to increase so that from the civilian viewpoint, the situation continues to deteriorate. From the agricultural viewpoint, the situation is also critical and WPB has the job to do so much with so little.

The one final note I make is that reports from overseas state that malarial cases are reduced among our armed forces which is most reassuring and, we therefore overlook the hardships encountered and those still to come.

I fear we are going to experience a difficult situation on Rotenone material the balance of the season. When we lost the Far East we lost three-fifths of our rotenone material in the form of derris root. The stimulation to production of cube root in South America was delayed in the process of transition of the purchase of this commodity at the origin from industry to the governmental agencies. Both a short term and long term program were inaugurated and they are now functioning.

Early this year there was a loss by enemy action of a steamer carrying almost a million pounds of cube and this of course aggravated the short position in the U.S.A. Recently over a 100 tons have been flown by the Army Transport Command from Brazil to LaGuardia and Floyd Bennett Fields and this material promptly passed into areas urgently in need of supplies. In the past week or two quantities of whole root arrived in New York and New Orleans and as soon as it can be converted into powder it likewise will pass immediately into consumption.

At the Mayaquez Experimental Station in Porto Rico, seed stocks are being raised and are flown by air to some Central and South American countries. The roots, however, have to grow at least two years before they are ready for harvest but the work is being systematically done in cooperation with the agricultural officials of the respective countries. In regard to statistics, it is impossible to give any figures as to stocks in hand. WPB has not released these figures to industry but we believe that all are aware that there is just about enough to protect only the essential crops mentioned in order M-133. On the encouraging side we may say that the pea crop will soon be in and we have heard of no loss from lack of Rotenone. With the stocks now arriving, it seems as though we can get through the next four months providing material at the origin continues to arrive even in limited quantities.

We can look for 4,500,000 to 5,000,000 pounds in the next twelve months. This is only 60 per cent of our requirements but with restrictions as to use on specific essential crops we hope we are safe in predicting the situation is well in hand and should improve from this time on.

Ptinus tectus[1] Damaging Furs in Alaska

By **MELVILLE H. HATCH**, *University of Washington*

Specimens of **Pitnus tectus** Boield, taken in December 1922 were brought in recently by Mr. N. G. Hanson, a storekeeper and trader located at Platinum, Alaska, Goodnews Bay on Bering Sea, at about 59° north latitude. Since 1941 the beetles have done a couple of hundred dollars worth of damage both to raw furs and to fur garments. A fox skin looked as though perforated by a shot gun, the tail had been eaten off the skin of a white ermine, and much fur had been removed from an otter skin. Mr. Hanson said he had seen specimens of the beetle reported as doing similar damage at Quinhagak, 75 miles north of Platinum, and had had them reported from Bothel, 110 miles north. Moreover, he said that this was the only insect of any sort he had so far encountered infesting his stores. —4-16-43.

[1]Coleoptera: Ptinidae

—*Journal of Economic Entomology.*

Variations In Rat Infestation On Vessels

By **ROBERT OLESEN**, *Medical Director, and* **G. C. SHERRARD**, *Acting Assistant Surgeon, United States Public Health Service*

AT THE New York Quarantine Station an excellent opportunity has been afforded for observing the incidence of rats on vessels. A degree of comparative accuracy attends the statistics gathered over a period of years because the results are based on the number of rats actually recovered after fumigation, thereby differing from the method of estimation, which has its obvious deficiencies.

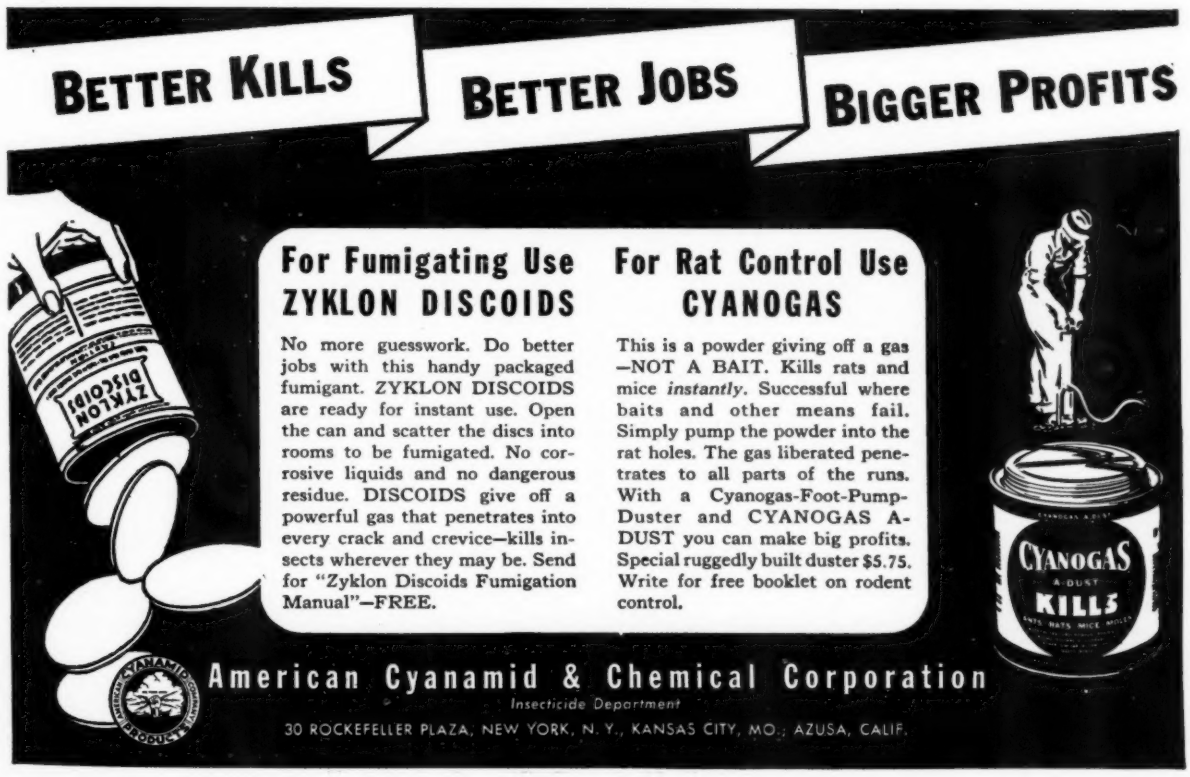
Fumigations from 1924 to 1930.—The records available at the quarantine station since 1924 show a considerable number of fumigations though not an unduly high average of rats recovered from each vessel. Table 1 shows an annual total of more than 1,000 vessels fumigated in each of the three years from 1924 to 1926, inclusive. During these years the average number of rats killed by fumigation ranged between 8.7 and 10.2 per vessel. Thereafter the average number of rats recovered on each vessel following fumigation failed to decline perceptibly until 1930, when an average of 7.7 was reached.

Table 1.—Number of vessels fumigated, total rats recovered, and average number recovered on each vessel fumigated at the New York Quarantine Station from 1924 to 1942, inclusive

Year	No. vessels fumigated	No. rats recovered	Average No. each vessel
1924	1,011	10,379	10.2
1925	1,179	10,516	8.9
1926	1,120	9,789	8.7
1927	936	9,324	9.9
1928	828	8,565	10.3
1929	873	9,625	11.0
1930	837	6,510	7.7
1931	566	3,353	5.9
1932	283	2,684	9.4
1933	190	1,779	9.3
1934	211	1,593	7.5
1935	204	2,374	11.6
1936	218	1,553	7.1
1937	202	2,666	13.1
1938	178	2,481	13.9
1939	118	1,473	12.4
1940	83	1,751	21.0
1941	90	2,241	24.9
1942	118	3,797	32.1

Fumigations from 1930 to 1940.—During the 5 years from 1930 fewer vessels were fumigated and a lower average of recoveries were recorded, these ranging between 5.9 and 9.3 for each vessel. In 1935 the average number of rats on each vessel fumigated was 11.6. Thereafter, except in 1936 and 1939, there were steady increases in average numbers to the present time. Coincidentally fewer fumigations were performed. It should be noted particularly that fewer fumigations were performed in 1940 than in any other single year; 83 were recorded in that year. However, during 1940 an average of 21 rats was killed on each of the vessels fumigated. In individual instances the numbers were high.

Ratproofing.—The decrease in the number of fumigations from 1924 to 1940 and the fluctuations in rat recoveries raise a number of interesting conjectures, especially as the New York Quarantine Station has been active in devising and applying methods of rat control. Foremost in repressive measures was the formulation of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methods whereby both new and old vessels might undergo ratproofing, this being a procedure directed primarily toward the elimination of potential harborages during construction.[1,2]

Rat infestation inspections.—Methods have also been devised and many individuals trained in estimating the number and locations of rodents on vessels. Success in estimating depends largely upon training and experience, forming incidentally a fascinating chapter in the perpetual war by public health workers against a cunning enemy. The application of these principles resulted in the restriction of fumigations to vessels on which there were definite evidences of rat infestation.

In the early days of frequent and somewhat haphazard ship fumigations it was noted that rat yields were frequently so small as to make the process of dubious value. Studies made in 1926 established the need for systematic preliminary inspections. The results of these studies were described by Akin and Sherrard[3] and prescribed as routine procedure in 1930. It was found, for instance, that a considerable amount of unnecessary fumigation was being done, there being only a few or no rats actually present on many of the vessels. Thereafter fumigations were based solely upon the results of carefully made ininspections. As skill and experience were acquired, the method of making inspections was correspondingly improved in effectiveness and thoroughness.[4]

Trapping.—The question then arose as to the action necessary when relatively few rats were present on a vessel, while conditions such as ports visited and general sanitation were satisfactory. Trapping as a supplementary measure became active in 1927 and has proved both effective in reducing rat life and useful in lessening expense and time loss to shipping companies.[5,6]

Sanitation in relation to infestation.—In a general way the degree of rat infestation is an indication of sanitary status. Therefore, fewer rats may be expected on a physically clean and tidy vessel than when opposite conditions prevail. If, for instance, food is accessible and there are harborages created by structural defects and improperly stored dunnage, rodents are more likely to be present. Recognizing the validity of this principle, considerable attention has been directed to improving the sanitation of vessels coming under the jurisdiction of the New York Quarantine Station.

One of the measures devised for better sanitary control has been the organization of sanitary units on vessels.[7] These units were in successful operation on large passenger vessels prior to the war and undoubtedly contributed to the exemption from fumigation enjoyed by many craft having their terminus in New York. Another plan, delayed for full installation by the war, is the so-called sanitary log.[8] The "log" provides for a cumulative sanitary record kept jointly by inspectors of the Public Health Service and officers of vessels. By stimulating ship personnel in guided sanitary effort the plan will enhance still further the maintenance of acceptable sanitation and the accompanying reduction of rat life.

Laboratory control.—It must not be supposed that the sole interest of the Public Health Service in rodents is in their extermination. At the New York Quarantine Station rats killed by fumigation or trapping on vessels are removed to the station laboratory for examination. The few fleas remaining on the rat bodies are recovered by combing and are identified. The rats are also classified and then autopsied for gross pathological le-

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sions. If sufficient fleas are available they are ground in a mortar with normal salt solution and injected into guinea pigs. If, as frequently happens, fleas are not present, pooled material from the internal organs of every 10 rats is prepared for injection into experimental animals. The animals are then kept under observation for a period sufficiently long to determine whether there is a reaction to the material injected.

Although plague infection has fortunately not been encountered after these trial injections the procedure is steadily maintained so that infection may be discovered promptly and necessary control measures initiated. At the same time, by having technicians, equipment, and animals constantly available, with facilities capable of immediate expansion, the station is prepared for eventualities.

Decline in number of fumigations.—The steady decline in the number of fumigations to 1940 may in part be ascribed to the appreciation by persons associated with commercial shipping, including agents, owners, and operators of vessels, of the handicaps under which vessels operate when infested with rodents. Failure to keep a vessel generally clean and free of accessible food that might be utilized for rat sustenance, to eliminate rat harborages, and to "build out" the rat whenever practicable have all caused grave losses to shipping interests. Then, too, the loss of time and money, as well as the inconvenience and expense attendant upon fumigation, have stimulated persons responsible for the expeditious and economical operation of vessels to exert themselves in maintaining rat-free craft.

The effectiveness of fumigation has also been increased by more thorough preparation of vessels for this process. For some time it has been the practice to detail a competent inspector to visit the vessel on the day prior to a scheduled fumigation and supervise necessary preparations, thereby insuring the best possible results from the liberation of the fumigant.

Beginning in 1940, a puzzling situation developed. Although the fewest number of annual fumigations in 17 years was performed, the average number of rats recovered from each vessel increased sharply. This possibly indicated indifference on the part of a few operators of vessels to regard seriously the presence of rats and failure to apply repressive measures. There was also indicated increased skill in selecting and fumigating the vessels most in need of this treatment.

War causes an increase in fumigations.—Since 1940 the number of fumigations has gradually increased, and the average rat recoveries from each vessel have been greater than during previous years. This has been due to the considerable increase in the number of "tramp" vessels coming to New York, vessels over which competent sanitary supervision had not been previously exercised.

It is particularly to be noted that the increases, both in fumigations and rat recoveries, have occurred during the past three years, when nations have been at war. Engrossed in the many rigid demands of war service, embarrassed by loss of skilled public health personnel and equipment, to say nothing of the constant demand for speed in loading and dispatching vessels, less attention than formerly is being directed to the sanitary supervision of vessels in foreign ports.

The decline in competent supervision has communicated itself to the operating personnel of vessels. In view of the need for quick "turn arounds," the shortage of seagoing personnel, and the dangers to persons operating oceangoing craft, it is not surprising that sanitation has suffered during the emergency.

Comment. — Despite continuing losses of trained personnel, the Public Health Service maintains sanitary surveillance over vessels entering United States ports. However, this is becoming increasingly difficult, as rodent control is being submerged by purely war effort. In the meantime, vessels of the armed forces, both regular and auxiliary, are calling at ports actually or presumably infected with bubonic plague and other quarantinable diseases. The quarantinable diseases, named in the International Sanitary Convention and the United States quarantine regulations, are subject to special control measures.[9]

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It is not pleasant to contemplate the effect upon the public health and the war effort by the introduction of quarantinable diseases into the United States. Suffice it to say that the presence of such diseases would necessitate the diversion of personnel and funds to widespread public health and sanitary effort to the detriment of war activities. Therefore, it becomes increasingly important to maintain rat control, among other precautions, on arriving vessels, though the effort is unfortunately handicapped somewhat by the secrecy necessarily attending ship movements and other factors already mentioned.

[1]Ratproofing of new ships. P. W. Clark. Supplement No. 151 to the Public Health Reports. U. S. Government Printing Office, 1939.

[2]Much of the credit for pioneering in the field of ship ratproofing and the subsequent developments therein belongs to Passed Assistant Pharmacist R. E. Holsendorf (Retired) of the Public Health Service. The principles of ship ratproofing were later extended by Mr. Holsendorf to the ratproofing of buildings. He is co-author of Supplement No. 131 to the Public Health Reports, The rat and ratproof construction of buildings with specifications, drawings, and photographs and a model ratproofing ordinance. U. S. Government Printing Office, 1937.

[3]Ship fumigation determined by observed rodent infestation. C. V. Akin and G. C. Sherrard. Pub. Health Rep., 42: 861-867 (April 1, 1927).

[4]Rat infestation inspection of vessels. C. L. Williams. Pub. Health Rep., 47: 765-800 (April 1, 1932). (Reprint No. 1529).

[5]Trapping rats on ships. Pub. Health Rep., 55: 1057-1061 (June 14, 1940) (Reprint No. 2170).

[6]Effectiveness of deratization of ships by trapping. G. C. Sherrard. Pub Health Rep., 56: 1061-1063 (May 16, 1941).

[7]The organization and operation of sanitary units on shipboard. G. C. Sherrard. Pub. Health Rep., 55: 470-473 (March 15, 1940).

[8]A sanitary log for American ships. G. C. Sherrard. Pub. Health Rep., 55:2167-2171 (November 22, 1940).

[9]Ship hygiene and sanitation. Robert Olesen. Supplement No. 114 to the Public Health Reports (revised 1940).

"PDB" Useful in Ant Control

In response to numerous queries, the Department of Agriculture advises the use of "PDB" as a fumigant for ant colonies in Victory gardens or on home grounds.

PDB is the popular abbreviation of the name of the chemical paradicholobenzene, often used for control of clothes moths. For control of most species of ants that are active in gardens, lawns, and on trees and shrubs, relief depends on exterminating the ant colony in the soil.

The Department's Bureau of Entomology and Plant Quarantine for years has recommended the use of carbon disulfide poured into small holes punched to a depth of several inches and spaced about a foot apart in the vicinity of the ant holes leading into the colony. This is still a rapid and effective way of killing ants. But PDB may serve practically as well and is likely to be more convenient to buy and safer by far to use and store.

PDB crystals are obtainable at drug stores, are not expensive, and the fumigating gas which they release in the soil is not inflammable or explosive, as is the gas from carbon disulfide. To treat an ant colony, punch holes in the soil as for carbon disulfide and pour into each a small quantity of PDB (2 or 3 teaspoonfuls) and fill the holes with soil. It is not necessary to cover the surface with a gasproof cover, as is desirable when carbondisulfide is used. PDB evaporates during the course of several days to free a gas that will kill the ants or make them so uncomfortable that they will move elsewhere. The warmer the soil, the more rapidly will the evaporation take place.

For ants living in galleries in decayed wood of trees and shrubs, carbon disulfide injected into the holes from a small oil can is likely to be the most convenient remedy.

Either carbon disulfide or PDB may have an injurious effect on growing plants, but if there are only one or two ant hills in the garden, it is advisable to treat them, even though a few plants are killed. In lawns the injury to grass usually is not severe enough to offset the gain from eradicating the ants.

In many cases ants may be controlled by use of poisoned baits or sirups, exposed on a wad of absorbent cotton in a suitable container which ants can enter and leave easily. The ants will transport the poisoned sirup to the colony and feed it to the immature ants. Two effective sirups are suggested by the Federal entomologists. Formula 1 calls for 4 ounces of sugar and ½ ounce of tartar emetic added to a quart of water. Formula 2 adds 1/7 of an ounce of sodium arsenate to a pint of water sweetened with a half-pound of sugar.

Ordinarily most species of ants do not injure plants or sod severely by eating either roots or foliage and flowers. In lawns and gardens, the entomologist say, the ants may do considerable damage (1) by displacing small plants, (2) by carrying seed away, (3) by tunneling among the roots until the roots are stripped of soil and cannot absorb a normal supply of moisture and plant foods, (4) by raising mounds of soil that may bury plants, and (5) by transporting from one plant to another the aphids or plant lice which injure the plants by sucking their juices. Aphids also may transfer plant diseases.

For information on methods of control of ants that are pests in dwellings the U. S. Department of Agriculture offers free on request Leaflet No. 147, "House Ants."

Who Will Eat the Rats?

Thousands of rabbits have been killed annually in making pregnancy tests. This has represented a waste of many thousands of pounds of meat in a period when meat is becoming very scarce.

That rats can be used for pregnancy tests has just been discovered and reported at a recent meeting of the New York State Medical Society. The new test method is not only less costly but more speedy. The old test with rabbits required 48 to 96 hours. The newer test requires only 2 hours.

At about the same time that the new test was announced, Dr. E. D. Plass of Iowa City reported in the **American Medical Association Journal** that it was an "unwarranted assumption that rabbits utilized for pregnancy (Friedman) tests are unsuitable for food." He stated that many members of his staff had eaten these rabbits for years with no harmful effects and the demand has grown by leaps and bounds under meat rationing. Dr. Plass effectively advocates conserving our nation's meat supply with a bit of poetry:

"If you're not a Babbit
You'll enjoy the rabbit
That entered into rest
To give a Friedman test.

While it may seem funny,
You'll enjoy the bunny,
Who's done her double duty
For Victory and Beauty."

Denver Squirrels Face Extermination as Menace

Death Penalty for Rodents Fought by Nature Lovers

Denver—Denver's squirrel population was on the spot today—branded by the City Council as a menace—but nature lovers sought to defend the rodents.

After an hour-long debate, the council passed on first reading an ordinance authorizing police to exterminate the squirrels which multiplied from two dozen imported nearly forty years ago from the Mississippi Valley.

The ordinance, up for final passage next Monday night, is opposed by residents headed by Paul L. Atkinson, an insurance broker, who awakes early to feed squirrels rattling his front door.

Action by the council resulted from complaints that the squirrels make their homes in attics and damage property; they take collectively great hunks of trees, shrubs and gardens; they prey on small birds, steal their eggs and wreck their nests.

N. Y. Times.

A super-salesman is a guy who can sell a double-breasted suit to a Phi Beta Kappa man.

New and Potential Insecticides

By **R. C. ROARK**, *U. S. Department of Agriculture*

Reprinted from Soap and Sanitary Chemicals.

SUBSTITUTES for household insecticides may be grouped in two classes, (1) materials that are complete substitutes for the standard insecticides and (2) materials that can replace the standard insecticides only in part and are designed for use admixed with them.

Very few chemicals are known that are complete substitutes for the standard insecticides. A possible example is sodium fluosilicate (known to the trade as silicofluoride of soda). Toxicologically, sodium fluosilicate is equivalent to sodium fluoride when compared on the basis of equal fluorine content. Inasmuch as sodium fluosilicate contains about one-third more fluorine than does sodium fluoride, three pounds of the former should equal four pounds of the latter. From a practical standpoint, however, differences in the physical properties of the two salts, such as crystal form and particle size, and the presence of different impurities, make difficult the substitution of one for the other. Nevertheless, it does seem possible that sodium fluosilicate, by suitable grinding and possibly by the addition of a conditioner, could be put into a physical condition in which it would dust readily, in which case it would doubtless prove a satisfactory substitute for sodium fluoride. Investigations along this line should be made, because sodium fluosilicate is one of the few chemicals that promise to be more abundant in 1943.

The number of materials that are partial substitutes for the chief household insecticide, pyrethrum, is very great. Pyrethrum flowers contain two insecticidal principles, called pyrethrin I and pyrethrin II. The first is responsible for the kill and the second for the knock-down of houseflies. Many materials are known that will kill adult housefiles when dissolved in kerosene and applied as a spray, but nothing has yet been found that is equivalent to pyrethrin II in its instantaneous paralyzing action. Hence, pyrethrum extract must still be used to ensure knock-down of flies, although the kill can be accomplished by the use of numerous synthetics, many of which are well known to the insecticide industry under proprietary names. The activity in developing new synthetics for use in household fly sprays has been very great. Bowen and Smith recently examined the United States patents issued during the period February 1938 to June 1941. From 75 of these patents they obtained a list of about 1,400 organic compounds proposed as substitutes for pyrethrum for use in kerosene fly sprays. In this list 339 thiocyanates and 4 isothiocyanates are included. Few of these synthetics are described as being effective in themselves, but rather they are intended to partially replace pyrethrum and to be used with it.

In considering mixtures of insecticides, the possibilty of synergistic action is to be kept in mind. Synergism is defined as "co-operative action of discrete agencies such that the total effect is greater than the sum of the two effects taken independently."

A clear-cut example of synergism is the use of sesame oil with pyrethrum extract. Eagleson[1], [2] in 1940 reported that, of all the fatty oils he tested, only sesame oil enhanced the insecticidal action of pyrethrum extract against houseflies. Haller et al.[3] in 1942 reported that sesamin in the sesame oil was responsible for its synergistic action. Sesamin alone caused no knock-down of houseflies in 10 minutes and only 5 per cent mortality in 24 hours, but when it was added to pyrethrins in refined kerosene (1 mg. pyrethrins and 2.5 mg. sesamin per cubic centimeter) the kill was increased from 20 per cent to 85 per cent. The structure of sesamin is well known, and synthetic compounds of related make-up have been prepared. Asarinin, which is a constituent of the bark of the southern prickly ash, acts similarly to sesamin and is related chemically to it. Isosesamin also enhances the killing action of pyrethrins against houseflies, but pinoresinol (a constituent of spruce gum) and its derivatives, dimethylpinoresinol and diacetylpinoresinol, do not.[4] It is concluded from the work done so far that the nature of the substituents on the benzene ring is the only determining factor in the synergistic

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action of this class of compounds. This finding opens up a large field for future research and indicates that not only natural products but also synthetic products will be found that are markedly synergistic when used with the pyrethrins.

According to the literature, mixtures of rotenone with certain organic thiocyanates display synergistic action against houseflies. The possibilities of finding synergists for use with organic insecticides, both synthetic and of plant origin, seem bright.

The Bureau of Entomology and Plant Quarantine has been developing new synthetic organic insecticides for a number of years. They have been developed for the primary purpose of finding a substitute for lead arsenate. It is likely, however, that many of these horticultural insecticides are also toxic to houseflies and other household insects. The writer believes that the following compounds, which have been proved to be toxic to coddling moth larvae, mosquito larvae, the southern armyworm, melon worm, cabbage looper, cross-striped cabbage worm, imported cabbage worm, and other insects attacking vegetables, are worthy of testing as household insecticides: Phenothiazine, xanthone, phenoxathiin, pentaerythrityl bromide, styrene dibromide, paraiodoazobenzene, paraiodonitrobenzene, phenazine, 4, 6-dinitroorthocresol, 2-chlorofluorene, phthalonitrile, 2-furanacrylonitrile, paraiodoacetanilide, paraaminoacetanilide, and 2-furaldehyde semicarbazone. These compounds and additional ones listed by Smith[6] may be found not only to be toxic to household insects, but also to serve as activators, or synergists, when mixed with pyrethrins in fly sprays. McGovran and Sullivan[5] recently reported that methylphenyl-nitrosoamine and 2, 4-diamylcyclo-hexanol activated the pyrethrins present in highly refined kerosene. It is probable that many other synthetics will have a similar action.

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Research and Practice Complementary

Foregoing submitted through courtesy of Mr. A. M. W. Carter, Government of Canada Pesticides Administration, Ottawa.

From "Place of Research in the Control of Injurious Insects" by Prof. J. W. Munro, Imperial College of Science and Technology, page 157, of Nature, February 6, 1943. In a discourse before the Royal Institution on December 18, Prof. Munro reviewed the work done from 1929 on in the control of pests infesting a number of foods imported into the United Kingdom. He said in one place,

"The following items of experience gained in this work deserve notice because they illustrate three fundamental principles in applied entomology.

1. that the way to tackle a practical problem is to get right down to it. When that is done the scientific problem becomes clearer.
2. that the research necessary for the solution of practical problems can only be defined when both research and practice keep in the closest touch with one another . . .
3. that the scientific work required for the solution of practical problems cannot be confined by any doctrinaire or academic definition of the branch or branches of science in which it lies."

He made the point that while research should be on a long term basis as far as possible, there is often a gap between such work and practice which can only be filled by research work devoted to a special end. He concluded by saying,

"I favour, then, the freest basic research in the closest contact with practice, but I often meet with the view that free research aimed at the discovery of new laws and principles is incompatible with practice; that it is impracticable in war-time; that research and practice cannot run in double harness, and that their aims are totally different. That their aims may be different I do not for a moment deny, but that they are incompatible is demonstrably untrue.

"So it comes about that in this field of work in the control of injurious insects there is and must be a continuous going to and fro between practice and research and between research and practice. They are not incompatible; they are complementary, and it may be some compensation for the sorrow and tragedy of war if in this and in other fields fundamental research and practice can continue to work together.

Entomological Literature

*Ants and their Control in California, by J. E. Eckert and Arnold Mallis—Cir. 342.

*Insects Affecting Stored Food Products, by E. G. Linsley and A. E. Michelbacher—Bul. 676.

*The Common Dry-Wood Termite, by Paul A. Harvey.

*Control and Prevention of the Western Subterranean Termite, by W. B. Herms.

*Above publications may be obtained, free of charge, by writing to: Publications Secretary, Agricultural Experiment Station, Berkeley, Calif.

"War Must Not Stop Public Health Work"

Radio Speaker Urges Householders to Greater Efforts for Sanitary Conditions.

Vital public health work must not be hampered by war limitations, or casualties from disease will be added to the inevitable casualties of war, John Buxell, public health engineer for the city Health Division, said yesterday in a talk over radio station KWK.

Although represented often as one of the Four Horsemen of the Apocalypse ("War, Famine, Pestilence and Death"), outbreaks of disease "need not be an accompaniment of war" as long as the important functions of sanitation are preserved, Buxell declared.

Each householder, he added, must assume a greater responsibility in the control of nuisances, however, so official sanitation work may expend greater efforts in the control of such increasing problems as "industrial health, sanitation in eating and drinking establishments, regulation of boarding and rooming houses and rat and mosquito control."

Industrial expansion in St. Louis and the surrounding metropolitan area caused a great influx of persons, bringing with it increased problems of sanitation, he pointed out, saying:

"These new residents need more purified water; they produce additional wastes, such as garbage, refuse, sewage and air contamination. They are filling low-grade housing with its poorer sanitary facilities and crowded dwellings, particularly hotels, boarding houses and rooming houses."

Black markets, substitution and adulteration of foods and shortages of sanitation materials, said Buxell, also increased the problems of sanitation. A few persons, he added, used war difficulties as an excuse for unsanitary conditions.

Need to prepare against sabotage, bombings, poison gas and bacterial warfare (although the latter is "extremely unlikely"), Buxell said, and plans for disease prevention following the war created more sanitation problems, while the war lessened the means of fighting them.

—*St. Louis Post-Dispatch.*

MASS MURDER

Mexico City (AP)—A woman employed by the Institute of Applied Biology was charged yesterday by police with killing 29 white mice in laboratories of the school—"because she was mad at her boss."

—*N. Y. Post.*

WHAT'S NEW IN PEST CONTROL-PERSONALS

The Initials "M.P." signify Military Police to most. Not so, however, in pest control, especially when they appear in lower case in the lower left-hand corner of the Secretary's letters, where they stand for Mary Pallis, the Secretary's secretary—the young lady whose nimble fingers transform WOB's cylinder-recorded messages onto paper. Mary, who vacations in Texas, not so far from an Army camp, denied with more vigor than conviction (at least to us) that matrimony was not included in her itinerary. Maybe so, but to anyone who has laid eyes on yon fair lady, it is obvious that if Mary prefers the state of single blessedness, for the moment, to marital bliss, it is because she wants it that way. Have a nice vacation, Mary, and try not to get lost—Texas is a big state.

From down on his farm up in New England, Geo. B. Lay, District Agent, Boston, and—much too infrequent—contributor of articles to Pests, comes a letter advising that his rationing and housing problems, if any, are in process of solution. As witness some of his remarks: "We are about to add another room to the house, etc., but don't know when the work will start or end. Also, I have a darn nice garden, for we Lays are going to eat if nothing else." And adds: "My spuds are up and going great guns but nowhere near the digging stage but we are getting much to eat, already, out of the garden."

Eilly Buettner, Jr., and Jim Steckel are summering at Reynoldsburg, Ohio, where they are getting in some good licks at pitching hay. As a result they will be able to report after the war that they did their part for their weight and ages.

Corporal John Lewis, Second Airdome Squadron of the A. E. F. in Australia, and son of Harry Lewis of the Rose Exterminator Co., of Buffalo, N. Y., writes his Dad: "I got the letter with Mr. Houghton's address and thanks a lot. There was one at his home and one at his office and I looked them up at the latter. There are two brothers, W. E. and Bernard, and they were swell to me. I went to Mr. W. E.'s house for supper one night and met his wife and I had a swell time and I have a steady invitation to go there anytime I am off work. On Friday I went to Lunch with Mr. B. Houghton and he took me to (censored censored) here in town and boy what a high class place." It is to be hoped that others who find themselves in or near Sydney, Australia will contact the Houghton brothers, who, we feel sure, will be more than glad to make them feel at home "down under." We in the U. S. appreciate what the Houghtons are doing.

George F. White, poultryman of Spofford, N. H., owns a dog by the name of Pal, who is bad medicine around the White establishment to the rat population. His record kill, according to the New England Homestead, is 55 rats in one month. Mr. White makes Pal an allowance for each rat and each mouse he kills and the record shows that Pal, who is 8 years old, is assured of being well cared for about the next nine years, provided he lives that long.

Looks to us like Pal is a whole Rat project all by himself.

Robert Loibl, Sr., who has been ordered to Mexico City for his health, and his son, Bob, Jr., both of the Master Pest Control Co., Los Angeles, stopped off while en route at Laredo, Texas, for a visit with Edith and Jack Kilmartin with whom they made the rounds, prompting Bob, Sr., to write "Having the time of your young lives," and Bob, Jr., to "P.S."—"No work, but lots of fun." Get well soon, Bob. Hope to see both of you and the Kilmartins at the NPCA War Emergency Meeting in October at St. Louis.

Twenty Years in Business: On July 1, the well-known firm of John Powell & Co., Inc. celebrated its twentieth anniversary in the service of the pest control industry. Congratulations, and many more years of successful business life to a concern that has contributed materially to the advancement of the industry.

Magnus, Mabee & Reynard, Inc.—An advertisement released by this concern in a recent issue of "Fortune Magazine," to announce Citronella Replacement No. 21 MM&R, as an efficacious replacement for imported Citronella, has produced many interesting inquiries from government and

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education institutions for the privilege to reproduce the illustration, which shows Hitler, Hirohito and Mussolini seated around a swastika, and a mosquito shaking hands with Hirohito. It is labelled "New Axis Member?".

Reproduction proofs available on request.

Rubber Tires in Prospect? The Dow Chemical Co., announced recently that full scale production had been achieved six weeks ahead of schedule in the first unit of its new styrene plant located in Los Angles. In terms of easing our critical rubber requirement, this new Los Angeles unit is producing sufficient styrene each day to permit manufacture of more than 14,000 passenger car tires. When the second unit is brought into production, which is scheduled for August, the total equivalent will be almost 30,000 passenger car tires per day or almost 11 million per year.

Punctilious—Seems a sergeant was bawling out a rookie on account of the shoes he was wearing. The recruit explained he'd had them in private life. "Did you also," snapped the sarge, sarcastically, "have a top hat when you were a civilian?" "Yes," was the reply. "Then, why don't you wear that, too?" "Don't be silly," retorted the private, "A top hat with brown shoes?"

EPIDEMIC PERIL: A report prepared by a special House district subcommittee, headed by Congressman Thomas D'Alesandro, Jr., of Maryland, after an investigation of slum housing, etc. in Washington, D. C., brought out these facts, among others: (1) Typhus germs have been found on rats in the District of Columbia, and the "large rat population" is a "potent threat of a typhus epidemic." (2) Malaria-carrying mosquitoes are prevalent and "there is a shortage of quinine" in the city.

General von Stulpnagel, in charge of the occupying forces in Paris, arrived late for dinner at the house of a sham collaborationist. Apologizing for the delay, he said, "These acts of discipline keep me very busy. I have just ordered the execution of another hundred hostages."

Silence. Then the mistress of the house asked suavely, "Wouldn't you like to wash your hands, General?"

Rotenone—WFA has limited rotenone insecticides for the protection of crops and animals to uses which will contribute most to the food production program. WPB, however, will continue to allocate the unprocessed rotenone to manufacturers in accordance with the uses stated in Food Production Order No. 13.

Ever notice that our soldiers overseas don't complain of cooties (lice) with any of the vehemence they squawked with in the first World War? It may be because of our secret weapon against that pest. Just before this war broke out, experiments by a former Nobel prize winner proved that when vitamin B-2 was fed to lice-laden rats, the insects promptly left those rats—and similar results were expected when B-2 was fed in certain quantities to human beings.

—Neal O'Hara, N. Y. Post.

FIELD MICE ON FOX MENU

Cottontail Rabbits, apples, and field mice are popular items of food for foxes, ranking in the order given.

KILLERS FOR POISON IVY

The perennial poison ivy question comes to the fore again and recommendations for eliminating the baneful weed are the topic of all over-the-fence conversations. Aside from sodium chlorate and ammonium sulfamate, two of the most effective cures, which are at present sometimes difficult to obtain, commercial preparations and such eradicators as rock salt and crankcase oil (if any happens to be around), the latest recommended "sure cure" is borax.

A release from the Connecticut Agricultural Experimental Station, New Haven, states that ten pounds of dry borax, scattered over the ground where the ivy grows, will treat a square rod of ground; or one pound to thirty square feet. The killing action of borax lasts approximately a year. An application of lime after this time will make the soil safe for planting.

Dupont Weed Killer, which contains ammonium sulfamate, is non-inflammable and is sprayed on the foliage of the ivy. Still

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another method of combating the pernicious plant is by "smothering." Tarpaper, or a very heavy, "smothering" mulch of leaves, old hay, or straw, held down by bricks or rock and left all season, will usually kill it, roots and all.

—*N. Y. Times.*

MOTH CONTROL

Special refrigeration equipment installed in army and civilian flying fields is used to kill moths in aviators' wool and fur lined flying suits. Killing results from shock cycles of repeated heating and cooling treatments.

Reeling Rats. George Hoyt of Berkeley, Calif. said he had found that the best way to catch rats was to feed them frozen pudding flavored with sherry: "I got those rats so tight I could catch them with my bare hands."

—*Time.*

Plague Threat to New York Averted

Thanks to the vigilance of its municipal Health Department New York City has escaped a possible attack of the plague according to the N. Y. Times. Health Commissioner Ernest L. Stebbins told a conference held in New York by the United Hospital Fund the story of a ship which arrived from Casablanca about two months ago. Medical inspectors found no serious rat infestation and no sign of infectious disease in the crew. Later, when the cargo was discharged, rats were discovered and the order was given to fumigate the hold. This ship had touched at a port in which human plague was endemic and infected rats were known to exist. The rats killed on the ship during fumigation showed signs of plague infection. Drastic action was immediately taken. The area around the ship was purged of rats.

MORE LUMBER FROM BEETLE-PROOFED FORESTS

Saving much valuable timber from the ravages of the pine beetle may be possible through a new system of "sanitation-salvage logging," says the U. S. D. A. The gross annual loss from damage by the pest, as estimated by entomologists of the ARA is more than a billion board feet—enough lumber to build 68,000 five-room houses. The new method is described by the Bureau of Entomology and Plant Quarantine as "Stopping the loss before it occurs." It depends upon taking out these trees susceptible to beetle attack and which would normally be killed if left to stand in the forest. This method has been called "sanitation-salvage logging." It is a job for an expert who can recognize the susceptible trees, and removal of trees that would be beetle bait.

An Army engineer who returned from Alaska this week was asked about his job there. "All I can tell you is a story which is vouched for by my men working on the Alcan Highway," he replied. "And this is the story: A few mosquitos knocked down an engineer, and pinned him to the earth. One mosquito asked: 'What'll we do—finish him here, or take him home?' Another mosquito answered: 'Finish him here. We don't want the big ones to get away from us.'"

"The Lyons Den"—N. Y. Post.

TIMBER DAMAGE

A booklet, "Recognition of Decay and Insect Damage in Timbers for Aircraft and other Purposes", has been prepared by the Forest Products Research Laboratory of the Department of Scientific and Industrial Research to fill an urgent need. It is an endeavor to help those handling timber in recognizing fungal and insect damage and in distinguishing between defects which impair its strength and blemishes which only mar its appearance. Failure to recognize serious defects may lead to the inclusion of faulty material possessing inferior strength; the rejection of material showing mere blemishes causes waste of much useful timber.

Part I deals mainly with timbers ordinarily employed in the manufacture of aircraft and airscrews, and Part II with certain others in general use. Copies may be procured from H. M. Stationery Office, London, England, for 6d. net, according to Chemical and Engineering.

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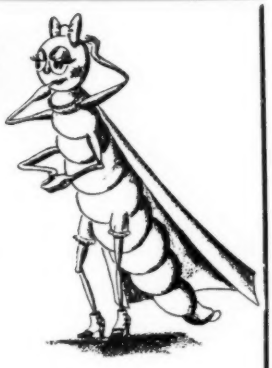

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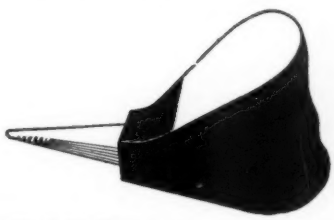

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EDITORIAL

(Continued from Page 5)

to keep their work up to standard in all respects—even to the extent of turning down work when they are in the position where their facilities may be strained to the point of not being able to perform in a safe and efficient manner.

Keep in Practice

ALONG the lines of the foregoing subject, it is suggested that in order to keep themselves and their operators up to par, a periodic examination be held within the organization. If conducted in the right spirit this could become an interesting and profitable "game" for both employer and employee. Such examination and informal discussion could bring to light, among other things, possible defects in individual practice which could be corrected.

1. What special precautions need to be taken when fumigating for carpet beetles?
2. In what way may fans be useful in fumigation?
3. Describe and illustrate the Schafer Prone Pressure Method of Resuscitation.

The Fruit of the Flame

The title of this message and the following thoughts were inspired by the excellent presentation of "Ethics In Pest Control" by Mr. A. M. W. Carter, Director of Pesticides for the Dominion of Canada, in the February 1943 issue of "Pests," and by the timely and clearly expressed sequel, "Driving Home Ethics," written by Mr. John G. Vogel in the May, 1943 issue of "Pests."

My sincere hope and desire is that this thread of thought will be carried on by another and still another member of our profession until the truths of its importance will not only become deeply rooted in the practices of all of us who call ourselves Pest Control Operators, but will become so firmly implanted in the minds of the public that our profession will soon become recognized for its worth and respected for its value to all mankind.

The tiny spark which started our Structural Pest Control industry decades ago was the lowly itinerant rat catcher. Little did he know, or realize, that the results of his obscure and humble beginning would burn brighter and brighter and eventually be the flame that would either destroy or guide a civilization groping in the darkness of ignorance and superstition.

As time rolled on, we passed out of this stage of trial and error, and moved into the eddies and whirlpools of progress and science, and called ourselves Exterminators. Too often, we forgot and the fruits of our labors were blinded by the very flame which we had kindled to guide and help, by the acquisition of strength and money.

Then came the modern day and age with rapid strides being made in sanitation, public health, and other fields of applied science, and we call ourselves PCOs. We, as a National Pest Control Association, adopted a "Code of Ethics," to be used as our guiding light to cast the brilliance of its rays into every darkened corner, so that others would be enabled to see, and in seeing, gain confidence in us, who have set ourselves as an example.

Now that we have taken our bearings and charted our course, let us stir the better man within us and renew our determination to gain respect and faithfully serve our fellow man. Do not allow pride or greed to destroy, or the flame which we have kindled, consume the fruits of our labors.

June 29, 1943. —J. A. Jett.

The W. O. Buettners* Make It a Foursome

Somewhat belated but ahead in all other respects, Theodore Charles, measuring 21 inches from blonde fuzz to feet and weighing 7 lbs. 13 oz. from stem to stern, made his appearance in person at the Hackensack Hospital, Hackensack, N. J. on June 11, and, in doing so, achieved the unique, if temporary, distinction of being the youngest member of the pest control industry extant. In time, his heritage being what it is, he will achieve a more permanent distinction, no doubt.

Though he looks like Helen, which is all to the good and no reflection on Bill, of course, he resembles Bill, too, in that, according to well-informed sources, he showed up bearing a Service Letter in one hand and a microphone in the other, which, again, is O.K. by us and no reflection on Helen either.

Helen weathered the trying experience like a veteran trooper; Theodore Charles the new under-secretary of the NPCA, sems happy about the whole thing, probably wondering, however, how long this has been going on; and Billy, Jr. is busy pitching hay somewhere in Ohio in order to help make the world a better place for his newborn brother to live in. This brings us to the forgotten man—the man who suffers most and gets in everyone's way, including his own, during those eventful hours, under the impulse of which he becomes utterly helpless, completely bewildered and momentarily loco—the man

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who evokes jibes, inhales smelling salts, smokes cigars and paces to and fro in ante-rooms—the man who because of his very obscurity, perforce of circumstances, becomes glaringly conspicuous—in short, folks, this, as you guessed, is the composite etching of an expectant father—all fathers, and in this instance, Bill, who, the doctor assures us, will be quite himself again as soon as Helen returns to Brooklyn. The one consolation throughout was that they never lost a pregnant father. Well, congratulations are in order and we hasten to extend them, as so many others have already done, together with the warmest of well wishes to all members of the Buettner family.

**Secretary NPCA and operator Buettner Pest Control Co., Brooklyn N. Y.*

Stork Pays The Martin Meyers* a Visit

Not so long ago it was our unpleasant lot to report the sad passing of the son, not yet five, of Norma and Martin Meyer, of Philadelphia. This time we are glad to announce the birth of a son to them on July 5th. Felicitations and the best of all good things to Norma and Martin, whose happiness at the birth of their son, Richard Melville, must take on a heightened quality, if that is possible, because of their previous tragedy.

*Theo. Meyer, (Est.)

P.S. Everything we said about Bill and expectant fathers, just above, goes for Martin, too.

Gerald Clem a Father

Since, as reported on another page, the two most recent additions to the Industry were boys, Richard Melville (Martin) Meyer and Theodore Charles (William O.) Buettner, Gerald "Red" Clem, Rose Exterminator Co., St. Louis, Mo., decided to keep the score even, or nearly so, and as a result we are privileged and pleased to add the name of Patty Ruth—and every bit as pretty as her name—to the roster of July births in the Industry. In his fatherly excitement "Red" forgot to mention the date of his daughter's birth, but, date or no date, she is an accomplished fact, a person in her own right, a mind of her own, and a member in good standing in the Clem household. And, Oh, yes, we almost forgot, Mrs. Clem, who was just an innocent bystander while all this was going on, is doing all right, we are glad to report. Lots of happiness and heartiest congratulations to the Clems.

Dick Clowes a Grandfather

What goes on here? And still another happy arrival in the personage of Hugh Ellsworth Evskine, Jr., on July 19, weighing in at 7 lbs. 7 ozs. Mrs. Evskine is the daughter of genial Dick Clowes of Pittsburgh. We recall the splendid work done by Dorothy and Hugh at the convention last year. Heartiest congratulations.

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Action of Derris and Rotenone on the Firebrat

By C. H. RICHARDSON *and* E. J. SEIFERLE
Iowa State College, Ames

THE insecticidal action of derris and rotenone on the firebrat, **Thermobia domestica** (Packard), seems not to be reported in the literature. Since a record of the toxic effect of rotenone-bearing plants on this primitive insect is desirable both from theoretical and practical considerations, the results of a preliminary study, covering the periods from March 3 to 25, 1938, and from June 28 to August 6, 1939, are offered at this time.

Baits containing powdered derris and rotenone were presented to adult firebrats. The baits consisted of rolled oats, sucrose and sodium chloride, finely ground and thoroughly mixed, in the proportions, 200:10:5. Derris or rotenone were incorporated in amounts sufficient to give rotenone concentrations of 0.1 to 4.0 per cent. Most of the baits also contained a non-toxic dye, Scarlet R, in the proportion of 0.5 per cent, which served as an indicator of ingestion or refusal of the bait. Slight to heavy consumption of a dye-containing bait was revealed by a light to deep red color of the insect's body; and the presence of anything more than traces of the dye could be detected at the conclusion of an experiment by dropping the insect into chloroform.

The derris powder was a commercial product containing 4 per cent rotenone and 14 per cent of total ether extractives; the rotenone was a chemically pure sample.

The insects were placed individually in shell vials, each vial containing approximately 0.03 gram of the bait and a support made of medium-weight typewriter bond paper which enabled the insect to rest at will out of contact with the bait. The experimental vials were maintained at a temperature of 38° C. and relative humidity of about 70 per cent. Further details of experimental procedure are given by Seiferle et al. (1938) and Richardson & Seiferle (1940).

Table 1.—Mortality of the Firebrat on Baits containing Derris and Rotenone.

Material and Percentage Concentration[1]		Percentage of Insects Dead in 24 hrs.	48 hrs.	72 hrs.	96 hrs.
Derris[2]	0.1	14	18	22	22
Rotenone[2]	0.1	19	21	21	24
Derris	0.5	66	80	82	82
Derris	1.0	100			
Rotenone	1.0	46	58	62	65
Derris	4.0	100			
Rotenone	4.0	82	89	92	93

[1] Derris was incorporated in the derris baits in amounts to give the percentages of rotenone indicated.
[2] The results from each test with derris bait are based on 5 subsamples of 10 insects; for rotenone baits the results are based on 10 subsamples of 10 insects.

If the insects ate the bait readily, that fact was revealed quickly by the deep red color of their bodies; if the bodies of the insects were not colored and the insects appeared normal, the baits were considered to be repellent; and if the insects died without a trace of the dye in their bodies, then a contact action of the baits was suspected.

The results of the experiments are given in tables 1 and 2 which follow:

Baits containing derris at rotenone levels of 1 and 4 per cent killed the firebrats within 24 hours. Since there was no evidence of feeding, the action of the derris must have been by contact. At 0.5 per cent rotenone content, mortality from the derris bait was still considerable yet no feeding was indicated and even at 0.1 per cent, feeding was not observed until the 96 hour period when, in most instances, the chloroform test was required to detect the small amount of ingested bait.

In comparison with derris, rotenone was less toxic at all levels except 0.1 per cent; and at this concentration only a moderate degree of feeding was evident. The percentages of insects feeding on baits of this rotenone concentration departed rather widely at all time levels from the percentages of mortality.

Table 2.—Feeding by the Firebrat on Baits containing Derris and Rotenone.

Material and Percentage Concentration		Percentage of Insects Colored by Scarlet R in 24 hrs.	48 hrs.	72 hrs.	96 hrs.
Derris[1]	0.1	0	0	0	20
Rotenone	0.1	28	32	40	64
Derris	0.5	0	0	0	0
Derris	1.0	0	0	0	0
Rotenone	1.0	4	6	8	8
Derris	4.0	0	0	0	0
Rotenone	4.0	4	8	8	8
Bait alone[2]		77	86	94	100

[1] Derris was incorporated in the derris baits in amounts to give the percentages of rotenone indicated.
[2] Based on 18 subsamples of 10 insects; the other tests were based upon 5 subsamples of 10 insects.

The experiments demonstrate that rotenone and derris are toxic to this lepismatid, and that under the condi-

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tions of these experiments toxicity results very largely from contact action. Perhaps a stomach poison effect could be induced by artificial feeding, since Tischler (1935) killed the caterpillars of several species of lepidopterous insects by oral administration of derris extracts. In these experiments, however, the baits containing the lowest content of rotenone were eaten much less readily than the control baits. This apparent repellent effect may have resulted from poisoning acquired by contact with the rotenone.

On the practical side, there would seem to be a place for derris dusts in the control of the firebrat. A dust prepared by incorporating derris to 1 per cent of rotenone in talc, clay, bentonite or other suitable carrier should prove useful for protecting stored books, documents, paper and fabrics from attack by this insect, especially in locations where the use of a poisoned food bait might prove dangerous. —Reprinted from Jour. Econ. Ent.

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Insecticide Protects Hardwoods

A new toxic solution, which acts both as an insecticide and a preventive, has been formulated to wage war on the destructive powder post beetle, according to Chemical and Engineering News.

This beetle is a small, prolific insect which causes highly polished hardwood floors to break out into a sudden rash of small bulletlike holes, and strong-looking ax handles to break apart in one's hands like kindling. Although native to hardwood regions in the southern states, this beetle has appeared wherever hardwood has been shipped and stored.

When this insect appeared so profusely in a number of tool handles purchased by a contracting firm that some of the handles were literally breaking apart in workmen's hands, the company appealed to the wood technology laboratory of I. F. Laucks, Inc., Seattle, Wash., for help. Their problem was to kill the grubs in slightly infested handles, and to prevent the laying of eggs in the other handles.

Spreading of the destruction occurred when grown beetles, seeking a new supply of food and additional places to lay eggs, flew from one handle to the other. Eggs are laid in the natural cells of the wood and, as hardwood has such large pores, and the grub is so small, it enters the wood with no visible boring. After several months, the grown beetles pop out, leaving behind them a series of canals which has entirely disintegrated the interior of the wood, leaving only an outside shell.

Laucks laboratory technicians developed a liquid insecticide which not only penetrates the wood cells but also acts as a water-repellent. Besides ridding hardwood of the beetle, it is also effective in counteracting the effects of many other types of wood-borers. This water-repellent type of insecticide is also valuable in treating hardwood flooring in storage.

Girl, 13, Kills 74 Rats in Contest

Geneva, N. Y.—A 13-year-old girl, Anne Tarr, is this city's champion rat killer. Participating in a contest to rid Geneva of the rodents, she won first prize—a $25 war bond—by disposing of seventy-four rats. —*N. Y. Times.*

It has been said that there is not much difference between one man and another, but what little there is, is important.

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Toxicity of Some Nitroparaffins to the Confused Flour Beetle

By HENRY H. RICHARDSON, MILTON S. SCHECHTER, *and* H. L. HALLER, *U. S. D. A., Agr. Res. Adm., Bureau of Entomology and Plant Quarantine*

THE development by Hass et al. (1936) of an efficient method of nitrating the gaseous paraffins has made available commercially and at a low cost a number of homologous alkyl nitro compounds, or nitroparaffins. While numerous studies have been published on the insecticidal properties of aryl nitro derivatives, nitromethane and nitroethane only, of the nitro alkyls, have apparently been evaluated for their toxicity to insects. Roark & Cotton (1930) found nitroethane to be more toxic than nitromethane as a fumigant to the rice weevil, and McAllister & Van Leeuwen (1930) found nitromethane to be 52 per cent as efficient as lead arsenate against the codling moth larva.

It appeared of interest to determine the insecticidal value of the readily available homologs of nitromethane, and in this paper are given the results of toxicity tests conducted in 1939 and 1941 on six nitroparaffins as fumigants against the confused flour beetle, **Tribolium confusum** Duv. The compounds were tested in 5- or 6-liter glass flasks by the method described by Richardson & Casanges (1942). Five-hour exposures at 25° C. and approximately 50 per cent relative humidity were used. The compounds were tested 12 to 14 times at various concentrations near the minimum lethal concentration. From 50 to 100 beetles were used per test, and the final mortality counts were made 10 to 20 days after the treatment.

The approximate concentrations to kill 50 and 95 per cent of the insects were determined from free-hand curves drawn on logarithmic probability paper. Table 1 summarizes the results.

Table 1.—Toxicity of six nitroparaffins and carbon disulfide as fumigants against the confused flour beetle after exposure for 5 hours at 25° C.

Chemical	Approximate Concentration to Give— 50% mortality	95% mortality
	Mg. per liter	Mg. per liter
1-Nitrobutane ($CH_2NO_2CH_2CH_2CH_3$)	8	10
Nitroethane ($CH_3NO_2CH_3$)	9	14
1-Nitropropane ($CH_2NO_2CH_2CH_3$)	11	16
2-Nitrobutane ($CH_3CHNO_2CH_2CH_3$)	13	20
2-Nitropropane ($CH_3CHNO_2CH_3$)	19	35
Nitromethane (CH_3NO_2)	37	55
Carbon disulfide (CS_2)	56	100

All the nitroparaffins were much more toxic than carbon disulfide. 1-nitrobutane appeared to be almost as toxic as methyl bromide (Richardson & Casanges 1942), but it is much less volatile. In compounds having the nitro group attached to the first carbon atom, toxicity increased from nitromethane up to 1-nitrobutane, except for nitroethane, which was slightly more toxic than 1-nitropropane. Substitution of the nitro group into the 2 rather than the 1 position reduced toxicity definitely in the propane and butane compounds tested. The compounds containing the nitro group in the 2 positions, however, have an advantage in being more volatile. Nitromethane was much less toxic than nitroethane, in direct contrast to the relative toxicity of methyl and ethyl bromides to this beetle (Richardson & Casanges 1942). Studies of a possible postfumigation effect showed little change in mortality of fumigated beetles from the 4th to the 20th day.

The nitroparaffins are low in cost, have a mild odor, and are fairly stable, and the vapors of nitropropane are less toxic to rats and guinea pigs than are those of carbon disulfide or carbon tetrachloride (Hass et al. 1936). A more detailed pharmacological study of the nitroparaffins has been reported by Machle et al. (1940). The solubilities in water of nitromethane, nitroethane, and 1-nitropropane are about 10, 5, and 1.5 per cent, respectively, at 20° C. The flash point (Tag open-cup) of nitromethane is 112° F., that of nitroethane 106° F., and that of 1-nitropropane 120° F. The vapor pressure of nitromethane at 20° C. is 27.6 mm. (Hodge 1940), which is close to that of chloropicrin (29.7 mm.). At the same temperature nitroethane has a vapor pressure of 16 mm., and this value is progressively lower as the homologous series is ascended.

These nitroparaffins have been shown to be useful in the production of pharmaceuticals, dyestuffs, rubber chemicals, resins, and other materials, and apparently there is a large potential supply. They appear worth further study as fumigants or contact insecticides. —Reprinted from Jour. Econ. Ent.

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LOCAL ORGANIZATION NEWS

Los Angles District Meeting

From the turkey dinner which opened Ladies' Night at the recent Los Angeles District Meeting, to the series of fast-moving and entertaining vaudeville acts which concluded it, a festive occasion was had by all, with Larry Gray acting as Master of Ceremonies. In between turkey and vaudeville, seven applications for new members were accepted; Mrs. Hazel McNatt was appointed temporary chairman of the local Ladies Auxiliary of the Pest Control Operators of Calif., with an organizational meeting scheduled at the residence of Mrs. L. R. Alderman on July 17. Nine pounds of honey, donated by Wm. Fox (not the one of movie fame) were auctioned off, with proceeds to go towards building a club house for the members.

New Jersey Pest Control Association

Ever since a number of the members of the New Jersey Pest Control Association attended the Amherst Conference at Massachusetts State College early this year, a very keen interest has been exhibited into knowing more about insect identification.

Accordingly, efforts were made to obtain the guidance of a thoroughly qualified toxicologist; and through the kindness of Dr. J. B. Schmitt of the Agricultural Experiment Station, Rutgers University, New Brunswick, New Jersey—we were able to procure him for the instructions.

A series of five one-night sessions held weekly was instituted, and approximately twenty members of the Association availed themselves of this wonderful opportunity. The lectures were augmented by slides, and a laboratory session was held at each meeting, during which time identification under microscope was performed. Every student had to complete a number of identifications in each of the major economic pest groups; and besides being very enjoyable, it was highly profitable to all concerned.

No doubt, everyone has thought over and over again that if they had the opportunity to go back to school or college again, how differently they would act. How much more attention and effort they would put into their work. This course answered that oft-repeated wish, and everyone really did work.

We are all looking forward to our "second semester" during which a more advanced study will be undertaken, and which will be started sometime in latter September.

Our group wants at this time to express publicly its appreciation of the work done by Dr. Schmitt, whom we have all come to like and respect.

Our usual monthly meetings have been suspended for the three summer months, because of the press of business; and you will next hear from us after our first Fall meeting.

—Submitted by J. Edwin Sameth, Sec'y.

"WHEN WILL THE WAR BE OVER?"

From Africa, Ernie Pyle writes that the question soldiers are always asking him is: "When will the war be over?"

And that brings to mind an anecdote of the last war. Marshal Foch had a chauffeur named Henri. The poilus naturally thought that Foch might slip Henri a little inside dope and they besieged him with inquiries about the termination of the war. Henri had a stock answer: "The Marshal has not spoken."

Month after month Henri turned off questions with that reply. But one day, Henri, swelled with importance, announced that at long last the Marshal had spoken.

"Quick, Henri, what did he say?"

"The Marshal said to me this morning: 'Henri, when will the war be over?'"

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Please note, however, that you must request each booklet on a separate letterhead though they may all be mailed in one envelope addressed to Pests, 126 Lexington Avenue, New York City, N. Y.

GAS—HOT OR COLD?

Bulletin discusses the question which arises occasionally as to the advantage of a "hot" gas over "cold" gas, the hot gas being represented as hydrocyanic acid generated by the pot method and the cold gas being represented by the "canned" product, for example in the form of Zyklon Discoids. Bulletin also contains some helpful notes on gas mask canisters and bedbugs.

WRITE PESTS, A-C-68.

BELLOWS

New-type bellows, made of materials non-essential to war effort, described in circular. Manufacturer states though no springs are used in the bellows they can be operated with one hand. They contain no valves and are quick-filling through the opening in the nozzle. Available in sizes for professional and resale purposes.

WRITE PESTS—CENTRO.

THE ACTIVATING EFFORT OF PYRETHRUM UPON THE GERMAN COCKROACH

Research material prepared by John M. Hutzel, of the Ohio State University, Columbus, Ohio in cooperation with the Kenya Pyrethrum Extension Service, Inc., N. Y. Supervised by Professor F. L. Campbell.

WRITE PESTS—PYRETHRUM.

TERMITE CONTROL

Folder discusses concentrates available for two distinct methods of termite control: (1) treatment of timbers in place with an oil solution, and (2) treatment of all soil around an infested building or area with either an oil or water soluble chemical. Issuing company states it specializes in all problems concerning wood-destroying organisms and also wood preservation and invites your inquiries thereto.

WRITE PESTS—WOOD.

FUMIGATION SAFETY SUGGESTIONS

Of timely interest, in view of the at-hand fumigation season, is this bulletin which advocates as a safety measure the use of methyl orange-mercuric chloride test papers for the presence of HCN. It also discusses can openers for Zyklon Discoids, the need for adequate ventilation after fumigations, and gives a cautionary note on pilot lights in premises to be fumigated.

WRITE PESTS—AMERICAN.

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FUMIGATION AND PLASTICS

News release discusses use-co-ordination of such diverse chemical products as plastics and fumigants in connection with infested bagged grain, seed, packaged or boxed foodstuffs. Methyl bromide-plastic-tarpaulin method of disinfestation described.

WRITE PESTS—DOW

ELECTRIC FANS

Bulletin discusses value of electric fans in connection with fumigation work, also some pertinent thoughts on the Schafer Prone Pressure Method of Resuscitation, etc.

WRITE PESTS—AC-69.

PYRETHRUM - DERRIS - RED SQUILL PRODUCTS

Leaflet describes foregoing insecticides with special bait chart for use in connection with powdered red squill.

WRITE PESTS—PRENTISS.

SOLVAY PRODUCTS

48-page booklet in colors and illustrated, covering their entire line of Alkalies and Special Products, with a special section dealing with Para-Dichlorobenzene and Ortho-Dichlorobenzene.

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DEODORANT

Catalog includes price data, etc., on deodorant which it is felt can neutralize and deodorize such toxic agents as Thanite, Lethane 384 Special, Velsicol, etc. Also contains data on perfume oils for sprays made with pyrethrum and kerosene.

WRITE PESTS—MAGNUS.

PIGEON-PROOFING

Folder describes pigeon-proofing invention which manufacturer claims will completely and decisively eliminate the pigeon nuisance. In use by real estate companies, churches, government buildings, etc.

WRITE PESTS—STANLEY.

SODIUM SILICO FLUORIDE

Bulletin describes sodium silico fluoride product with proper density. Effective manner of testing for presence of HCN after ventilation also discussed.

WRITE PESTS—AC 70.

RECHARGEABLE STORAGE FLASHLIGHT BATTERIES

Literature describes permanent type of rechargeable flashlight battery which eliminates worry about a dry cell shortage, due to the use of critical materials, and can, it is stated, equal in use as many as 400 or more dry cells. Instead of constantly using new cells and throwing them away, you simply recharge the battery and it's "just like new" again, manufacturer states. The addition of a few drops of distilled water and regular charging is all that is necessary for an unlimited amount of bright, steady light.

WRITE PESTS—IDEAL.

HOUSEHOLD SPRAY FACTS

Manufacturer's bulletin discusses Lethane's killing power, range of insect control, cost, chemical stability, spray formulas, etc.

WRITE PESTS—ROHM & HAAS.

MOLE KILLER PELLETS

Circular describes mole killer pellets which manufacturer states requires no traps, no gas, no exposed poison. Diagram of runways and explains how mole lives. Testimonial letters.

WRITE PESTS—CARAJON.

FUMIGATION NOTES:

Discusses spread of Discoids; reinfestation; effects on vegetables and eggs.

WRITE PESTS, AC58.

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NPCA Service Letters—January 1, 1943 to July 1, 1943

The skeletonized NPCA Service Letter index presented herewith for reference purposes, primarily, does not begin to reflect the detailed and informative comments that supplement the various subject headings in the letters themselves. However, they do give an inkling of the variety and scope of the data and counsel available only to members of the Association. Nevertheless, Secretary W. O. Buettner, on behalf of the NPCA welcomes at all times letters from non-members.—Ed.

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